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AUTHOR Davino, Dana; And Others
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ABSTRACT

Teachers play an important role in monitoring the effects of stimulant medication used to treat Attention Deficit Hyperactivity Disorder (ADHD). Any negative attitudes they hold toward ADHD students or the students' parents, doctors, or medication, can compromise treatment efficacy. To assess teachers' perceptions of ADHD concerning social variables, drug therapy, causal factors, parental support, teacher training, involvement, and experience with ADHD students, 206 teachers, drawn from 11 elementary, middle, and high schools, were administered a 44-item survey. Comparative analysis revealed no significant relationship between teachers' stimulant attitudes and causal beliefs and their amount of experience with ADHD students. Teachers who advocated the use of ritalin were more likely to believe in genetic causal factors, and seemed more sensitive and aware of the social, academic, and medical problems associated with these disorders. Neither age nor experience appeared to mediate teachers' attitudes toward ADHD causes or treatment. Most teachers desired a high responsibility role in helping students with ADHD. Older and more experienced teachers expressed dissatisfaction both with their college training and in-service training on stimulant medication. Future studies may concentrate on the adequacy of teacher training on stimulant medication, both on the college level and through in-service training. Contains six references. (RJM)

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Relationship Between Teachers' Anti-Stimulant Attitudes and Their Experience With ADHD Students

Dana Davino
Alicia Lehr
Melissa Leighton
Kristen Miskar
C. A. Chambliss Ph.D.
Ursinus College
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Teachers play an important role in monitoring the effects of stimulant medication used to treat Attention Deficit Hyperactivity Disorder(ADHD). Their collaboration in the treatment process is crucial for a child's success. Negative attitudes toward ADHD students, their parents, their physicians, and their medication can compromise treatment efficacy. Suspiciousness regarding the potential misuse of ritalin is expected to vary as a function of the educator's experience with ADHD students and their parents, and the teacher's knowledge about the presumed neurophysiological basis of this disorder. Those teachers with greater experience and a more biological causal model of ADHD are expected to express less negative attitudes toward use of stimulant medication. A 44-item survey was administered to 206 elementary, junior high, and high school teachers to assess their perceptions of ADHD concerning social variables, drug therapy, causal factors, parental support, teacher training, involvement and experience with ADHD students.

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INTRODUCTION

In the classroom, children with Attention Deficit Hyperactivity Disorder(ADHD) have specific needs that must be met in order for them to be successful in the school environment. Symptoms of ADHD include heightened motor activity, short attention span, distractibility, impulsiveness, and lack of self-control. The prevalence of this disorder ranges from 5 to 10%, with males being four times as likely to be diagnosed than females (Sue, Sue, & Sue 1990). Children diagnosed with ADHD may have normal or superior intelligence, but are unable to sit quietly or to concentrate in the classroom. Stimulant medication often calms these children, and enables them to concentrate, usually within a day after treatment has begun. Presently, physicians are prescribing stimulant medication to treat large numbers of children diagnosed with ADHD. Therefore, amphetamines and its derivatives, such as Ritalin, are increasingly playing a major role in the management of children with ADHD.

Due to the large number of children receiving Ritalin for ADHD, it is necessary to assess and evaluate these students carefully in their school setting. Consequently, teachers should play an important role in the assessment and evaluation process. A study conducted by Kasten et. al.(1992) assesses teachers' knowledge about potential behavioral and physical side effects of stimulants. Also, the study surveyed teacher attitudes about the use of stimulants and the type of advice they may give to parents about the use of stimulants.

The study found that educators indicated that their knowledge

of the effects of stimulants was limited, and that they had received little education about stimulants. Ninety-six percent of the teachers stated that they had received too little or no training about stimulants in their undergraduate education programs, and between 92% and 94% of those teachers stated they had too little or no in-service training about stimulants. The data also revealed that teachers do not recognize all the effects of the medication. Over 50% of the teachers stated they did not know what physical and behavioral side effects might result from the use of stimulants.

A similar study done by Singh and Epstein (1990) was conducted to provide information on teachers' perceptions, knowledge and personal opinions regarding drug therapy for their students. The teachers were sent a survey, which was divided into three parts: demographics, drug-related questions and knowledge of drug administration.

The survey of one hundred and forty-six teachers found that the teachers desired more involvement in drug decisions and better relationships with their student's doctors. Eighty-eight percent of the teachers suggested that their pre-service training in issues involving drug therapy for children and adolescents was no training or too little training. In addition, 87.5% rated their in-service training as no training or too little training. An overwhelming 95% indicated that they desired additional training in issues regarding drug therapy.

The purpose of this study was to replicate and expand the 1992 study done by Kasten et. al. Teachers' knowledge and perceptions

regarding ADHD students and stimulant medication were assessed with items addressing attitudes toward drug therapy, causal factors, social correlates, and desire for teacher involvement. It was hypothesized that teachers with greater experience with ADHD students, and a more biological causal model of ADHD, will express less negative attitudes toward the use of stimulant medication.

METHODS

Subjects:

Two-hundred and six teachers drawn from 11 elementary, middle, and high schools participated in this study. The schools involved were a part of the eastern Pennsylvania and the southern New Jersey school districts. The mean years of experience of the teachers was 18.91 and the mean age of the teachers was 41.7 years. The teachers were evenly split into elementary, middle, and high school groups for the purpose of this study.

Survey Instrument:

A questionnaire consisting of 22 items based on a study by Kasten, et. al. (1992) and 22 author-devised items along with a cover letter describing the project was administered. In addition to demographic information, the questionnaire assessed teaching experience, training, perceived responsibility, stimulant attitudes, ADHD causal factors, and parental and ADHD social correlates. Items were 5-point Likert format with responses ranging from extremely true to extremely false, or strongly agree to strongly disagree. The final section of the questionnaire consisted of multiple-choice questions about potential side effects of stimulants, attempting to ascertain the factual knowledge of the educators.

Procedure:

Each teacher was administered an envelope in their individual mailbox consisting of the questionnaire and a Scantron form. Participants were asked to use a #2 pencil and mark all answers

clearly on the Scantron as they corresponded to the survey. Respondents were requested to complete the anonymous questionnaire and return it in the sealed envelope to a box labeled Ursinus College, which was located in the office. Participation was voluntary, and the teachers were assured that their individual responses would be kept confidential.

Results

The mean age of the sample was 41.7, and the majority had been teaching for more than 15 years. Slightly over two-thirds of the sample was female. The sample was evenly distributed across elementary, middle, and high schools.

The sample had considerable experience in working with children diagnosed with ADHD. 74.3% of the teachers are presently teaching one or more students with ADHD, while 12.6% did not know whether or not they were presently teaching one or more students with ADHD. Also, presently 79.1 % of the teachers are teaching one or more students on medication besides ritalin, and 8.3% were not sure if their students were presently receiving medication. The majority (86.9%) have worked with a student with ADHD and 93.7% of teachers have worked with students on medications at some point in their teaching career. The majority of respondents (64%) felt that they had not received adequate in-service training about the use of stimulants for treatment of attention deficit hyperactivity disorder (ADHD), and approximately 83% stated that their college teacher training program on stimulants was not adequate.

Thirty-eight percent of the respondents were not sure if they thought that ADHD is primarily due to genetic factors, and 42% agreed that it is due to how the brain processes information and inhibits motor activity. Most of the participants (74%) thought that ADHD is not due to how the child is taught to control their behavior. A little over half of the subjects (54%) thought that symptoms of ADHD would be made worse with inadequate adult supervision. Coinciding with that point, 51% agreed that

inadequate parenting practices make the symptoms worse.

Fifty-five percent thought that using ritalin to treat ADHD was like using insulin to treat diabetes. In both cases the drugs are compensating for chemicals that are underactive in the patient's body, and in both cases long term maintenance medication is often necessary. Only 28% felt that using ritalin for ADHD was like using coffee to reduce fatigue.

An overwhelming 89% of the respondents agreed that within the past five years doctors have been diagnosing more children with ADHD. Participants' responses were unclear as to whether they thought that ADHD children had parents who were also ADHD (23% believed parents also have the problem, 28% did not believe such an association existed). Three-fourths of the subjects stated that ADHD is not a result of a traumatic event within the child's family structure, indicating endorsement of a more biological explanation of ADHD. Although almost 50% of the subjects thought that drug therapy should be used only as a last resort, a quarter of them were still not sure, and the other quarter did not agree.

The results indicated that when detecting the relationships between ADHD children and other students in the classroom, 46% of the teachers saw that ADHD students are less likely to be socially acceptable. The majority of the respondents (56%) thought that the other students in the classroom were unaware of the students that were diagnosed with ADHD. There seemed to be no difference in whether or not the subjects thought that ADHD students' classroom participation was less than that of other students. Also, responses were equivocal as to whether or not ADHD students were

more likely to be isolated than other students during group activities.

Almost half of the subjects were unsure if the parents of ADHD children were more concerned with their child's academic performance, but almost 30% stated that the parents were not more concerned. Forty percent of the subjects were unsure if the parents of ADHD children participated more in the supervision of their children's homework.

A great majority of the respondents (90%) believed that the teacher should know if the student was receiving stimulants for ADHD. Most also agreed that stimulants are useful for the treatment of ADHD. Although almost half (42%) were not sure if stimulants were overprescribed, 25% stated that stimulants were overprescribed, and 30% stated that they were not overprescribed. Approximately 51% of the subjects thought that stimulants improved the ADHD student's academic performance (37% were unsure). When asked if too many students receive stimulants, 29% agreed, whereas 26% disagreed (the balance were undecided). Half of the respondents stated that student-student relationships were not damaged when peers discover that a classmate receives stimulants, but almost 30% were not sure if that was the case.

Only 2.4% of the teachers believed that there was excessive access to specialists who can assist in the management of stimulants. Over half of the teachers (52.9%) thought they received too little or no access to specialists. 60.2% of the teachers believed that the physician depends most on the parent alone for information regarding the effects of medication. On the

same question, 1.9% of the teachers felt that the physician depends on the educator alone for information regarding the effects of medication.

39.8% did not know how long an average dose of Ritalin lasts. Over half (55.3%) felt that the average time the effects of a single dose of ritalin last is 4-5 hours. 45.6% of the teachers had had a parent ask their opinion about putting their child on stimulants, while 50.5% have never had a parent ask their opinion about putting their child on medication.

77.2% of the teachers have never recommended to a parent that their child should seek stimulants, while 18% have recommended that a parent seek stimulants for their child. 39.3% of the teachers felt that the physician should use the teacher's evaluation of the child's behavior in deciding if doses of medication should be altered. In responding to the same question, 26.7% felt that physicians do not use teachers' evaluations of the child's behavior. However, 66% of the teachers believed that they should be responsible for observing and reporting the side effects of medication, while 15% felt that they should not be responsible in observing and reporting side effects of medication to the parent and/or physician. 71.4% have never suggested that a parent see a physician about the possibility of stimulants for their child, and 23.8% of the teachers have suggested that a parent see a physician for stimulants for their child.

In assessing teachers' knowledge of side effects of ritalin, 55.8% did not know which side effects result. 48.1% of the teachers did not know about the undesired behavioral side effects

of stimulants. 10.2% of the teachers did not know the positive effects of stimulants.

Summary scales measuring desire for involvement, attitudes toward ritalin, and beliefs about ADHD causal factors were calculated for each respondent by adding the directionally adjusted item values. Responses to the desire for involvement subscale (including several questions regarding teachers' desire to have a role in an ADHD student's "curriculum") showed that the majority (77.1%) of the teachers scored in the upper half of the scale's range, indicating a desire for high responsibility in helping students with ADHD.

Correlational analyses revealed no significant relationships between teachers' stimulant attitudes and etiological beliefs and their amount of experience with ADHD students. Both age and amount of teaching experience were negatively associated with teacher perception of the adequacy of the amount of training about stimulant medication that was provided by their college teacher education program (age: $r = -.17$, $N=202$, $p<.01$; experience: $r = -.21$, $N=202$, $p<.01$). Older and more experienced teachers were less satisfied with the training they had received. Older and more experienced teachers were more likely to have had parents ask their opinion about putting their child on stimulants ($r=-.17$, $N=202$, $p<.01$ and $r=-.17$, $N=202$, $p<.01$, respectively). Age was negatively associated with the belief that ADHD students tend to have parents with the same problem ($r=.17$, $N=202$, $p<.01$).

Additional correlational analyses revealed several significant relationships between teachers' stimulant attitudes and etiological

beliefs and their impressions of ADHD students. Teachers who endorsed scale items indicating advocacy of the use of ritalin were more likely to believe that genetic factors affect how the brain processes information and inhibits motor activity, thereby causing ADHD ($r=.18$, $N=202$, $p<.01$).

The respondents who advocated the use of ritalin were more likely to have worked with ADHD students ($r=.21$, $N=202$, $p<.01$), and to believe that doctors are currently diagnosing more children with ADHD ($r=.19$, $N=202$, $p<.01$). Teacher attitude about ritalin use was positively associated with the idea that in relation to other students, ADHD students are less likely to be socially accepted by their peers ($r=.17$, $N=202$, $p<.01$). Teachers who advocate the use of ritalin to treat ADHD were also more likely to believe that students with ADHD participate less than other students ($r=.17$, $N=202$, $p<.01$).

The pro-ritalin teachers were more likely to feel that teachers should be responsible for observing and reporting side effects of medication to the child's parent and/or physician ($r=.17$, $N=202$, $p<.01$). Teachers that advocate the use of ritalin, and those endorsing a biological explanation for the disorder, were more likely to have a positive view of the parent of a child with ADHD ($r=.18$, $N=202$, $p<.01$ and $r=.17$, $N=202$, $p<.01$, respectively).

Those showing high belief in the biological substrate of ADHD were less likely to blame inadequate parenting practices for making the symptoms of ADHD worse ($r=.20$, $N=202$, $p<.01$). They also were more likely to believe that ADHD students participate less than other students ($r=.21$, $N=202$, $p<.01$).

Discussion

The correlational analyses revealed several interesting findings related to teachers' desire for involvement, the adequacy of the amount of training on stimulant medication, and teacher attitude toward stimulant use. However, the magnitude of the correlations was small, indicating that the relationships accounted for only a small proportion of the overall variance.

It was originally hypothesized that teachers with greater experience and a more biological causal model of ADHD would express less negative attitudes toward use of stimulant medication. However, correlational analysis revealed that there was no significant relationship between teachers' stimulant attitudes and causal beliefs and the amount of experience with ADHD students. Neither teachers' age nor experience appeared to mediate attitudes toward ADHD causes or treatment.

Analysis of the desire for involvement subscale indicated that the majority of the teachers desired a high responsibility role in helping students with ADHD. This finding confirms the findings of Singh and Epstein (1990) that teachers desire more involvement in the treatment of ADHD students.

Age and amount of teaching experience were found to be negatively associated with teacher perception of the amount of training regarding stimulant medication that was provided by their college teacher program. It was also found that older and more experienced teachers were less satisfied with the amount of in-service training that was received about stimulant medication. The findings that older and more experienced teachers reported lower

satisfaction with their training programs may be explained in a variety of ways. It may be that college teacher programs are improving, and that younger and less experienced teachers are receiving more information regarding the use of stimulants to treat disorders such as ADHD. Alternatively, it may be that it is only with experience that teachers discover that their training programs are not adequate. A longitudinal follow up study might permit selection between these two explanations. This is important because it would help clarify the need for additional college teacher preparatory programs and teacher in-service training.

The teacher attitude toward ritalin subscale correlational analysis revealed several interesting points regarding teacher responsiveness to ADHD students. It was found that teachers who advocated the use of ritalin were more likely to believe in genetic causal factors, to believe that ADHD students are less socially accepted by peers and participate less than other students, desire more involvement in the treatment of the student, and view parents of ADHD students more positively. These findings suggest that teachers who advocate the use of stimulants to treat disorders such as ADHD, are more sympathetic and aware of the social, academic, and medical problems associated with these disorders. The attitude towards ritalin subscale could be used in the future to gauge teachers' responsiveness to students with ADHD, allowing for teachers with more understanding of the social and academic issues of the disorder to be the ones that teach ADHD students. It could also be used to target teachers who could possibly benefit from additional training programs.

More research needs to be conducted to clarify further the relationships observed in this and other studies. Future studies may concentrate on discovering if there is adequate teacher training, both on the college level and through in-service training. It becomes important to determine if training is adequate to prepare beginning teachers for the issues surrounding ADHD and the use of stimulants to treat ADHD, or if their inexperience "tricks" them into believing that they are prepared. The present findings also suggest that physicians and parents may need to allow teachers to have greater responsibility in the treatment of ADHD students. Teachers are given direct access to the ADHD student's behavior, day after day, making them a good source of observational data. Despite this, frequently little consideration is given to the teacher's feedback in determining positive or negative side effects of the drug treatment. Clearly, teachers are a valuable resource for improving the monitoring of medication effects. Future work should address means of utilizing their skills more fully.

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